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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,317	01/12/2001	Hisashi Semba	04853.0055-00	9114

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FINNEGAN, HENDERSON, FARABOW, GARRETT &
DUNNER LLP
1300 I STREET, NW
WASHINGTON, DC 20005

EXAMINER

MARX, IRENE

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 06/04/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/758,317

Applicant(s)
Semba et al.

Examiner
Irene Marx

Art Unit
1651



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 22, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-28 is/are pending in the application.
- 4a) Of the above, claim(s) 21-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other: _____

Applicant's election with traverse of Group I, claims 11-20 in Paper No. 6 is acknowledged. Applicants' traversal is based on lack of serious burden in examining the inventions and the conclusion that unnecessary delay and duplicative examination would be avoided.

For purposes of the initial requirement a serious burden on the examiner may be *prima facie* shown if the examiner shows by appropriate explanation either separate classification, separate status in the art, or a different field of search as defined in MPEP 808.02. That *prima facie* showing may be rebutted by appropriate showings or evidence by the applicant. No such evidence was provided.

In addition the argument is not found persuasive because the methods are of a different scope and the references which would be applied to one method would not necessarily anticipate or render obvious the other method.

Moreover, as to the question of burden of search, classification of subject matter is merely one indication of the burdensome nature of the search involved. The literature search, particularly relevant in this art, is not co-extensive and is much more important in evaluating the burden of search. Burden in examining materially different groups having materially different issues also exists.

Clearly different searches and issues are involved with each group.

For these reasons, the restriction requirement is deemed proper and is adhered to. The restriction requirement is hereby made FINAL. .

Claims 20-28 are withdrawn from consideration as directed to a non-elected invention.

Upon allowability, process claims which depend from or otherwise include all the limitations of the allowable product will be rejoined as appropriate.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 is confusing in the recitation "An immobilized enzyme in which (S)-hydroxynitrile lyase is immobilized...". It is unclear what is intended.

Claims 14-15 and 19-20 are confusing in the recitation "*Poaceae (Gramineae)*". It is unclear whether the parenthetical phrase is intended as a limitation or not.

Claims 13-14 and 19-20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must refer to preceding claims in the alternative. See MPEP § 608.01(n). Accordingly, the claim not been further treated on the merits.

Claims 12 and 17 are confusing because the claims encompass an improper Markush grouping. Language such as, selected from the group consisting of A,B, and C should be used. The claims as drafted do not follow this form, in missing "the group consisting of". See MPEP 2173.05(h)(a). Claims 12 and 17 are inconsistent in the use of "a" and "the" with respect to the carriers. The use of "a" in claim 12 appears correct.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11-13 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wehtje *et al.* (1988).

The claims are directed to an (S)-hydroxynitrile lyase which is immobilized on a carrier comprising a porous inorganic material.

Wehtje *et al.* teaches an (S)-hydroxynitrile lyase which is immobilized on a carrier comprising a porous inorganic material. See, e.g., Wehtje *et al.* (1988) page 420, col. 2. The reference teaches that the mean pore diameter is 200 angstroms, which is within the range claimed, i.e., 20 nm.

Claims 11, 12, and 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by (1993) or Wehtje *et al.* (1990).

The claims are directed to an (S)-hydroxynitrile lyase which is immobilized on a carrier comprising a porous inorganic material.

Each of the Wehtje *et al.* references teaches an (S)-hydroxynitrile lyase which is immobilized on a carrier comprising a porous inorganic material. See, e.g., Wehtje *et al.* (1993), Table IV, page 196; Wehtje *et al.* (1990), page 43.

Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wehtje *et al.* (1988) taken with Wehtje *et al.* (1993), Wehtje *et al.* (1990), Effenberger *et al.* and Andruski *et al.*

As noted in the rejections under 35 U.S.C § 102 *supra*, the Wehtje *et al.* references all teach an (S)-hydroxynitrile lyase which is immobilized on a carrier comprising a porous inorganic material. See, e.g., Wehtje *et al.* (1988) page 420, col. 2; page 421, Results and Discussion; Wehtje *et al.* (1993), Table IV, page 196; Wehtje *et al.* (1990), page 43. In addition the Wehtje *et al.* (1988) reference teaches that the mean pore diameter is 200 angstroms, which is within the range claimed, i.e., 20 nm.

The references differ from the claimed invention in that the source of the enzyme is not one of the disclosed groupings. However, Effenberger *et al.* and Andruski *et al.* adequately demonstrate that *Hevea*, *Manihot* and *Sorghum* are well known in the art to produce (S)-hydroxynitrile lyase (See, e.g., Effenberger *et al.*, col. 4, lines 47 et seq. and Andruski *et al.*, col. 1, line 32).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of the Wehtje *et al.* (1988) reference, for example, by using different types of porous inorganic carriers for a variety of (S)-hydroxynitrile lyase enzymes from known origins, for the expected benefit of maximizing the production of commercially and pharmaceutically valuable optically active cyanohydrins.


Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (703) 308-2922. The examiner can normally be reached on Monday through Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 305-3592, (703) 308-4242 and (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service whose telephone number is (703) 308-0198 or the receptionist whose telephone number is (703) 308-1235.


Irene Marx
Primary Examiner
Art Unit 1651